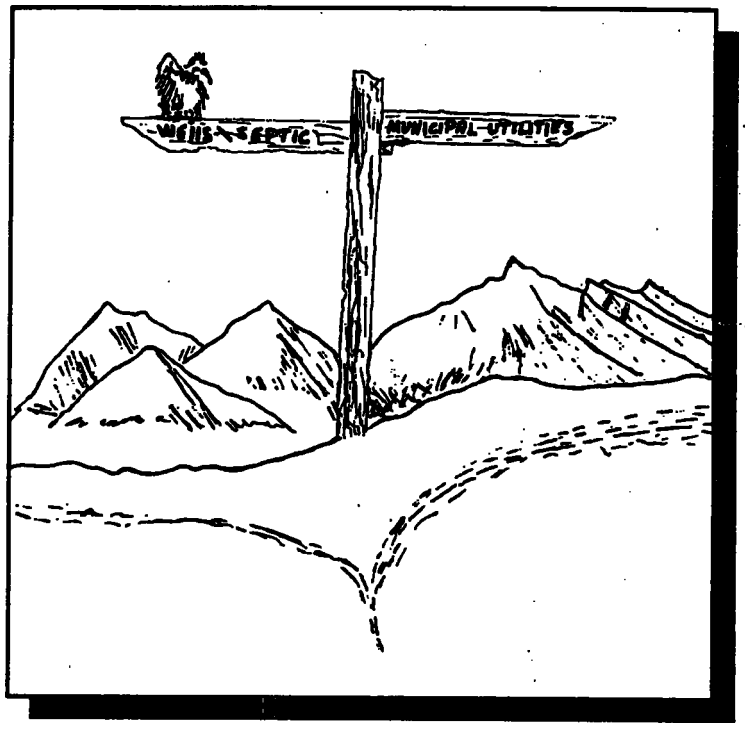
POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ DUE TO THE QUALITY OF THE ORIGINAL



17 May 1991

L.H. Dodgion, Administrator
Division of Enviromental Protection
123 West Nye Lane
Carson City, Nevada 89710

Dear Lu,

As we have discussed on several occasions, the following focuses on the proliferation of private wells, septic systems, and the need for wellhead protection throughout the Fernley Utility District.

To begin with we need to recognize a larger context. Futhermore, the deeper we go the more we get into areas of vision, community responsibility, and public health. Since these crucial values will not get discussed in comparision with the more tangible topics, something needs to said here about where we are coming from and toward what we are heading.

Vision has nothing to do with eyesight; everything to do with insight and outlook. Community responsibility is where our policies and practices take a stand in behalf of current and future residents. While public health involves the physical and personal well-being of children, adults, and the aging.

The issues reviewed within the body of this analysis apply to a variety of agencies and offices within the state government. Various aspects of the information have been discussed with many of our colleagues during the formation of these findings. Those are in the distribution list and hopefully those involved will also comment on the contents.

The complexity of the issues did not become apparent immediately, until a Fernley Town Board meeting in January of this year, specifically about a proposed Miller Estates Subdivision located on Miller Lane near downtown Fernley. The proposed Miller Estates Subdivision comprises 40 one-acre parcels utilizing septic systems and the newly installed Miller Lane water distribution main adjacent to the property. <ENCLOSURE 1> The site is within approximately 1800 feet of an existing collection interceptor. The proposed Miller Estates Subdivision, is in an impact area that if unregulated could see approximately 900 to 1150 one acre parcels with the potential of septic and wells on each! The same area could also develop approximately 18-2100 subdivision lots. <ENCLOSURE 2> The Fernley Town Board at a regular scheduled planning approval meeting held on January 2, 1991 supported the Miller Estates Subdivision concept, but without septic systems. The board is well aware of the problems associated in the Fernley area with continued growth and the increase of septic system usage and small private wells.

Since beginning to put together thoughts, implications, and conclusions on this issue, the scope of the project has expanded to include not only the original problem area of South Miller Lane, but all those areas within the Utility District that potentially influence quality of our groundwater. <ENCLOSURE 3 & 3A>

Indeed, it appears that groundwater quality is already being affected by septic systems in the Fernley area. <ENCLOSURE 8 A,B,C>

The Town of Fernley is concerned with individual wells and septic systems where parceling of land is utilized to effect a subdivision, bypassing subdivision laws\ordinances and thereby creating an additional demand on a already fragile groundwater source. This effectively bypasses prudent groundwater management. Recent Lyon County ordinances have helped to abate this problem, but there are still obstacles in proper management.

It is vital that public water supply personnel, regulatory agencies, water users, and resources managers be involved to ensure the preservation of groundwater resources for public benefit.

Background

Fernley's groundwater supply is delineated by the State of Nevada as a hydrological area called Fernley Basin #5-76. It is a designated basin with preferred usages by action of the State Engineer. The Town of Fernley comprises an area of approximately 161 square miles. Essentially all of Basin #5-76 lies within the Town boundaries. The boundaries of Fernley Town Utilities are the same boundaries as that of the Town of Fernley. <ENCLOSURE 4> The hydrologic system in the Fernley area is thought to be in a state of long term equilibrium as long as the Truckee Canal is operated under existing conditions. The Fernley groundwater basin is a fragile source from both a quality and quantity point of view. Quantity is a most critical point because the principal source of groundwater recharge <90%> to the basin is the importation of irrigation water through the unlined Truckee Canal and the placement upon irrigation lands within the Fernley area. The quality issue primarily involves excessive concentrations of arsenic and total dissolved solids that leach into the water table via percolation through the ancient Lake Lahontan deposits.

The Fernley aquifer is a "single source aquifer", serving as the only source of drinking water for the population.

The protection and use of groundwater should be guided by its susceptibility to contamination from septic systems, industry, and agricultural practices. Water quality and quantity are national, state, and local concerns. Appropriate handling of wastewater is essential in maintaining healthy standards of water quality and recharging ground water. The specific role of the septic tank in dealing with wastewater is of great concern to this utility as well as planners, developers, and private homeowners living in rural areas not yet serviced by municipal wastewater systems.

Planning for this scenario in the Fernley area began over 12 years ago with the "beginnings" of a Master Plan for sewer, septic, and wellhead protection. The Miller Road area has always been planned to be served by a system of interceptors and lift stations. <ENCLOSURE 5 A,B>

On February 5, 1991 the Fernley Town Board approved our engineer, Wateresource Inc., Reno, to begin a comprehensive wastewater management facilities plan update. This update is necessitated not only by the time that has lapsed since the plan was last addressed and adopted but also because of the necessity for the Town to apply to the State of Nevada for a State Revolving Fund Loan for needed Fernley wastewater system improvements. The plan update should be completed by August 1, 1991. The Miller Estates Subdivision developer was advised of the wastewater facility plan revision.

Existing Conditions

Rough approximations of septic tank densities within Fernley Utility District as plotted in three\random\one mile areas show 238, 90, and 117 systems. The toal number of septic systems is unknown. There also does not appear to be any data on the numbers of private wells within the Fernley Utility District. This information is being collected as part of our research efforts.

The Sandia 1 Subdivision located in the "heart" of the Fernley Utility District is a good example of bad planning. This subdivision has approximately 60 septic systems on subdivision type lots that have had numerous leach field and tank failures. The ground water table rises to within 8-10 feet of the surface during the T.C.I.D. irrigation season in the Fremont and Vine Street areas. What are the nitrate levels in this area? No one knows to what extent, if at all, groundwater contamination is occurring. Are the present evolution of private shallow ground water wells in the Fernley Basin producing water that does meet present water quality standards? Who's responsibility is it for water quality in these small wells? Fernley Utilities is putting together a program to study these areas and define actual conditions of the water resource. The Sandia Subdivision scenario cannot be allowed to happen again!

The recent passage of the Truckee River Settlement Agreement via Federal Legislation "clouds" the future predictability of what the impact of septic systems on the existing groundwater table might be in light of possible fluctuating levels of water in the T.C.I.D. canal.

Existing U.S.G.S. data indicates groundwater gradients in the Fernley area flow toward municipal wells. A groundwater computer modeling program is in the development stages to track and evaluate groundwater movement within the water basin. <ENCLOSURE 6>

Environmental Considerations

The lack of comprehension of natural conditions of groundwater occurrence and inefficiency in managing groundwater resources will lead to depletion and deterioration of our resources. This will limit their useability for individual, public, and industrial purposes. Uncontrolled use of groundwater to serve nonpotable demand, as well as use of aquifers for disposing of liquid wastes, could seriously compromise the usefulness of groundwater in the Fernley Basin. Control, management, and development of these resources has to come from the "grass roots" <local> level.

Where groundwater is used as a source of drinking water and is vulnerable to contamination, practices such as the siting of hazardous materials, waste management, and disposal facilities must be controlled through regulation. The pollution load resulting from waste disposal and other avenues of contamination must be addressed in the design and operation stage of the potentially contaminating activity during both active and passive periods. In particular, the susceptibility of soils to the passage of contaminants must be recognized.

It is unacceptable to wait until we have a "five mile underground contamination plume" before we react responsibly.

Actions, Projections <not a summary, or conclusions, but ongoing concerns>

1. A wastewater facility plan update will be completed. The time frame for completion is midsummer to early fall.

2. A Groundwater Protection Program must be implemented as soon as possible.

3. Complete municipal water and wastewater system infrastructure components must be installed whenever possible.

4. Private water and wastewater utilities within the Fernley Utility District are prohibited unless approved by the State of Nevada and The Town of Fernley.

5. New development be subject to utilization of <CWT> Centralized Wastewater Treatment. Satellite treatment, such as small package plants versus interceptors usually are not cost effective over long term operations.

6. Local and state co-operation guidelines be expanded on assessing the locations and relative threats of new wells and septic systems.

7. In the real "working world" of septic system siting there has to be some sort of formula, under local agency controlled criteria. This will allow continued development by requiring "dry" sewer infrastructure components. A bonded agreement would limit the number of units that could be built, on some time frame, before required integration into the existing wastewater system. Such a scenario would require a tempoary "master" septic system for the number of units installed.

8. Control the number of wells and septics by regulation after study of numbers\square\mile. Zones of protection can be delineated by a site specific computer area and\or computer model.

9. Greater use of SID's and Impact Fees to facilitate infrastructure improvements to water and wastewater.

10. Continue efforts to upgrade present Nevada Administrative Codes and Nevada Revised Statues that are, in some instances, outdated. < Example - NRS 278.460.4 > <ENCLOSURE 7>

11. Review and continue to update contingency plans for use in the event that contamination of wells does occur.

12. Implement a public participation and education program.

13. Immediate enforcement or adoption of regulations and ordinances on underground injection systems and underground storage tanks containing industrial or commercial products <mostly gasoline>. Many of these tanks may periodically be submerged in our local water table.

14. The present groundwater monitoring program must be expanded with additional monitoring wells and analytical data. This information needs to be collected in a data bank for "common consumption".

15. Survey Fernley's agricultural community, Nevada State, and Lyon County Road Departments as to where and what types of fertilizers, pesticides, herbicides, and other agricultural chemicals are being used within the water basin.

16. New domestic wastewater discharge will only be allowed in a delineated band or area provided it meets groundwater quality prior to contact with groundwater. This is monitored by requiring a leach field monitoring well\wells at each installation.

17. It is my opinion that changes in the operation of the Truckee River System and the Newlands Project <u>will</u> result in the loss of shallow private wells in the Fernley area sooner than anyone is aware of ! A plan to safeguard those property owners on private well and septic tanks needs to be developed <u>now</u> for their protection.

18. Water rights transfers and appropriations that are protested would require an Environmental Impact Statement <EIS> be completed by the applicant attempting the transfer with final approval by the State Engineer.

SUMMARY

The utilization of land-use restrictions and prohibitions is a very well established legal principle in our common law system as well as in other legal systems. Over 2000 years ago the Romans had both formal and informal restrictions on the use of property adjacent to surface reservoirs. Adjacent property owners were required to keep their cows out of the watershed. The application of these age old and well used methods for protecting potable water surface supplies are just as applicable to protecting potable groundwater supplies today.

This issue of aquifer and wellhead protection is not limited to the Fernley Water basin. The Nevada Legislative Commission's Subcommittee, chaired by Assembly Speaker Joseph E. Dini, Jr., to study the Laws, Regulations, and Policies Relating To Water and Wastewater Resources in Nevada, is also deeply involved in addressing these problems.

This office strongly supports the management and protection of groundwater resources to ensure optimal production of drinking water of the best attainable quality and quantity for present and future generations.

Careful consideration of the continued use of large blocks of septic systems as applied to any one area must be practiced. Direct positive action is needed to combat the possible explosion of private well\septic scenarios that developers are "waiting in the wings" to commence. Prudent utility infrastructure policies should be controlled by the State of Nevada, Town of Fernley, and Fernley Utilities and not realtors, developers, and planning consultants.

The drought, water conservation, water quality and quantity all play an important role in the future of Fernleys growing community and economy.

It should be the position of federal, state, and local governments to protect and enhance groundwater as a usable natural resource. **Groundwater must be used for beneficial purposes; waste and degradation of the resource must be prevented.** The rationale behind the need for special protection of groundwater stems from the fact that cleanup of contaminated aquifiers is almost unachievable for a small town like Fernley, both technically and financially. It is, therefore, essential that the State of Nevada and the Town of Fernley direct their policies toward prevention of contamination rather than corrective action after the fact. Because groundwater typically moves slowly, contamination can remain hazardous for an indefinite period.

Unless absolutely necessary, a moratorium on any septic systems within the Fernley Utility District is, in my opinion, unfair - but where do you "draw the line in the sand" ???

The value of a property, the need for financing, and the application for mortgages is always enhanced by the presence of municipally owned and operated water and wastewater facilities.

I request your comments and concurrence, along with those others of our colleagues receiving a copy of this review, **in not permitting any actions or approvals within the Fernley Utility District Boundaries that would result in degradation of our groundwater or is inconsistent with our water\wastewater management plans for this district.**

Now is the time for action on these issues. Lack of such action will multiply problems and costs in the future. More than that, with the proliferation of septic systems and private wells **the people of Fernley have much to lose: their health, to which a potable water supply is critical !!**

Sincerely,

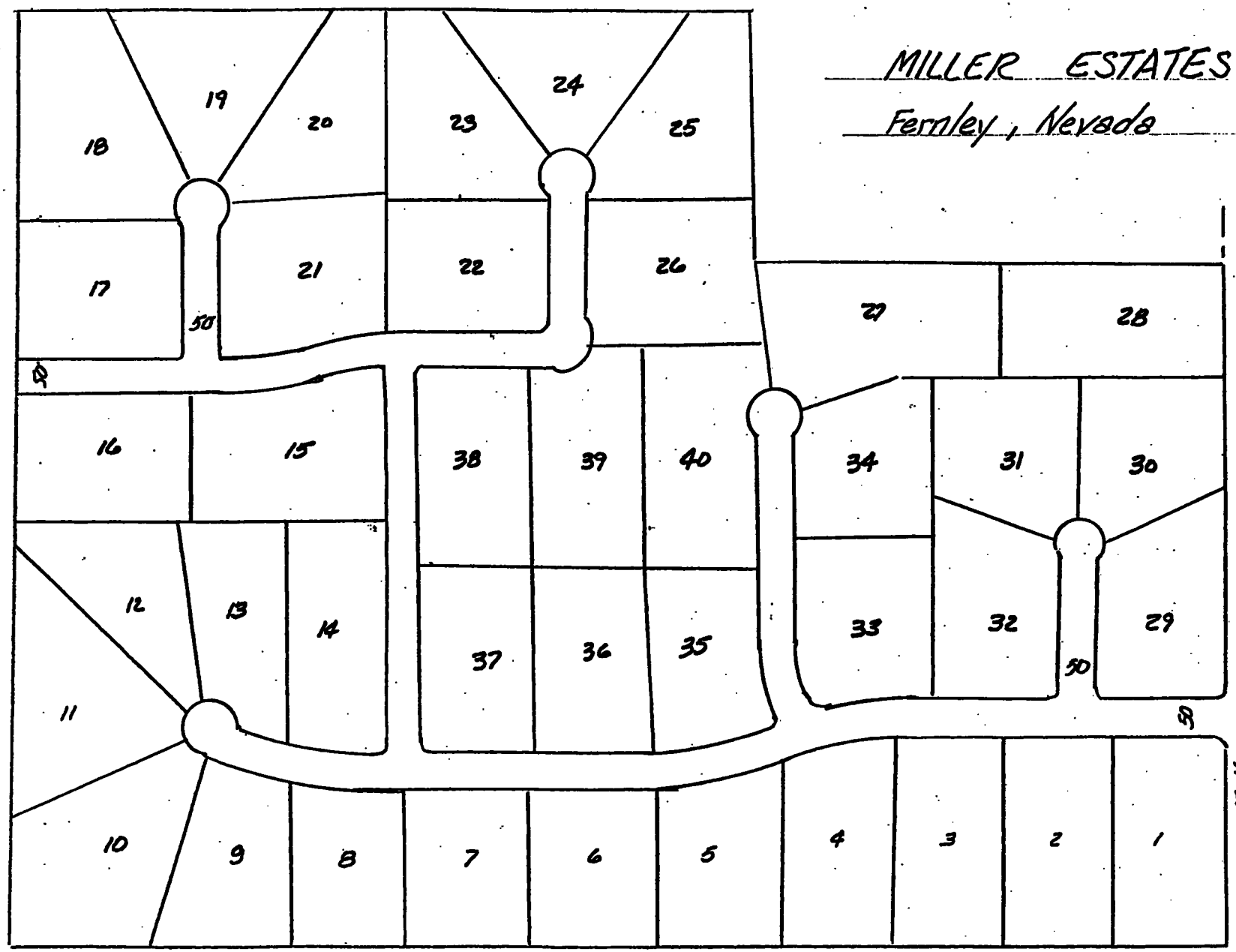
Kurt Kramer, Utilities Manager

cc: Fernley Town Board
Lyon County Commission
Lyon County Planning Commission
George Ball
Joe Dini
Virgil Getto
Pete Morros
Ret Jessie
Mike Turnipseed
Doris Betuel
Darrel Rasner
Dick Reavis
Wendal McCurry
Jim Williams

John Nelson
Art Molin
Hugh Ricci
Christine Theil
John Palm
Larry Reynolds
Jeff Fontaine
Dana Pennington
Rick Reighley
Dale Ryan
Larry Roundtree
Steve Brockway
Steve Synder
John Evasovic
Icl Mulligan
Rebecca Harold
Don Allen
Marc Simoncini
Aldo Urrutia
Jill Vanderziel
Ralph Heninger
Kim McCreary
Sharon Dalton

MILLER ESTATES

Fernley, Nevada



Scale 1" = 200'

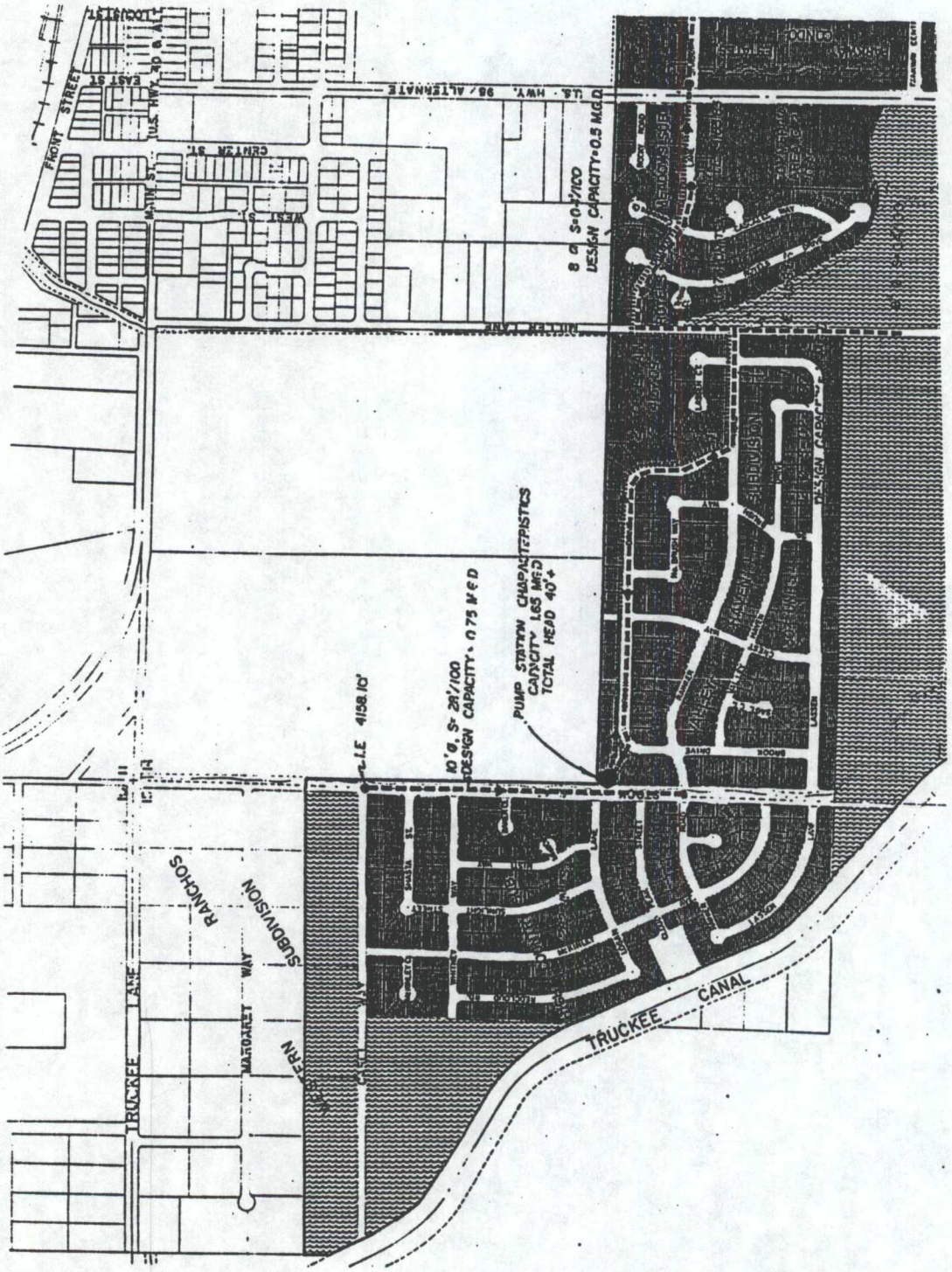
39 Lots @ 1 Ac, 1 Lot @ 1.10 Ac

Parcel size: 45.44 Ac.

LIAHONA ENGINEERING
P.O. Box 1059
Fernley, NV 89408
(702) 575-2293

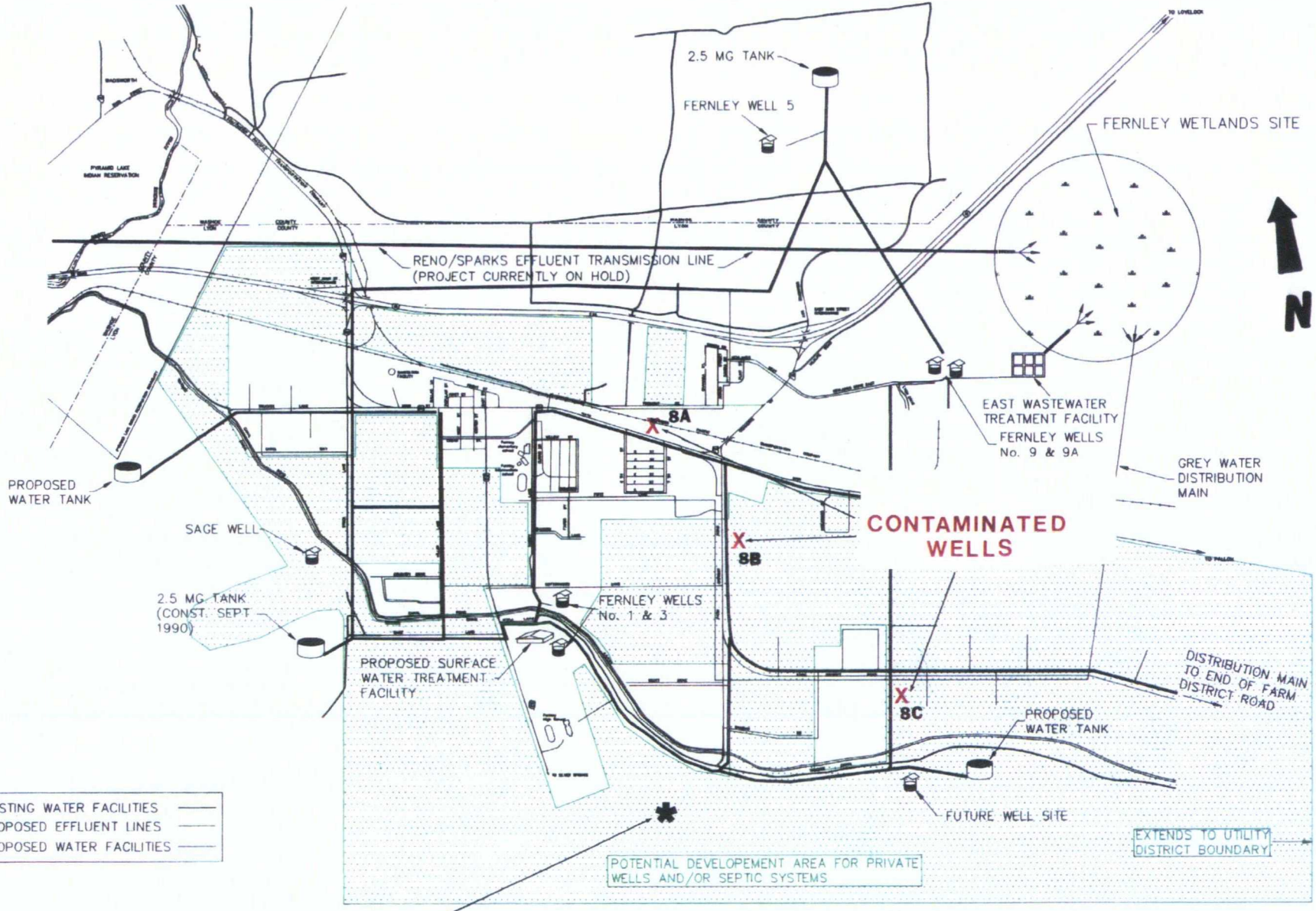
ENCLOSURE I

EXAMPLE OF PLANNING IN THE MILLER LANE AREA
IN 1979 THAT WAS NEVER CONSTRUCTED



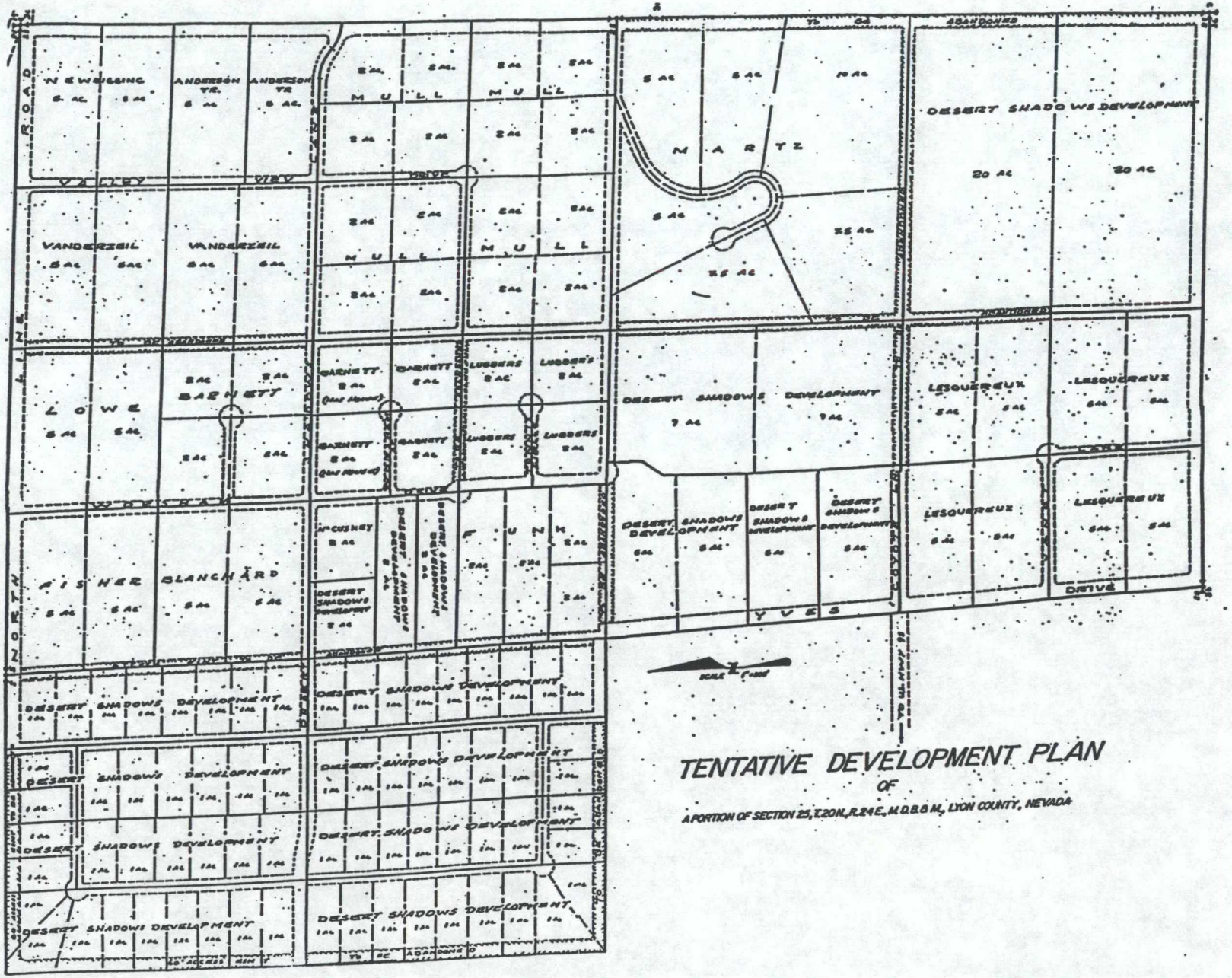
ENCLOSURE 2

ENCLOSURE 3



FERNLEY WATER SYSTEM CONCEPT

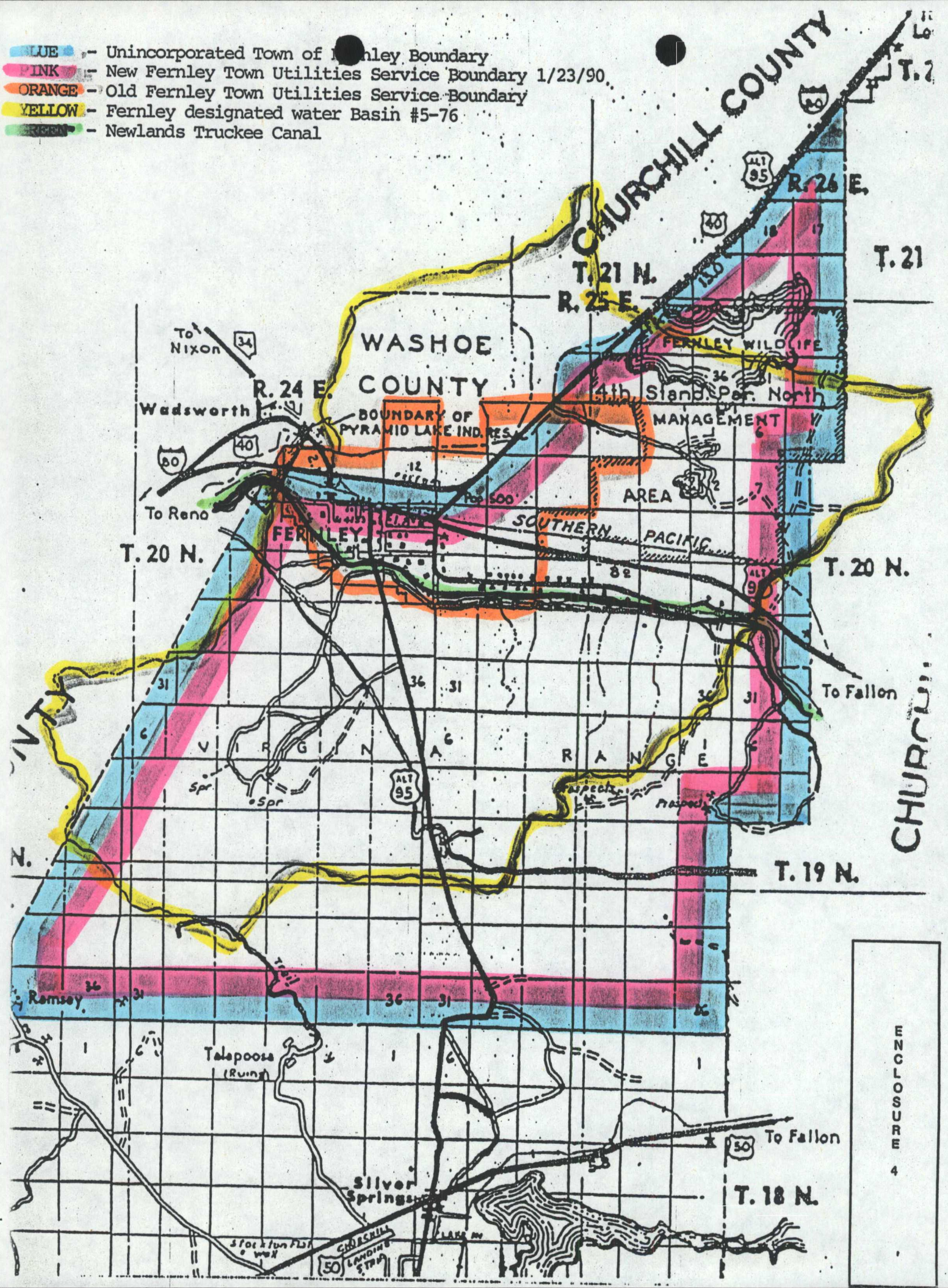
ENCLOSURE 3A

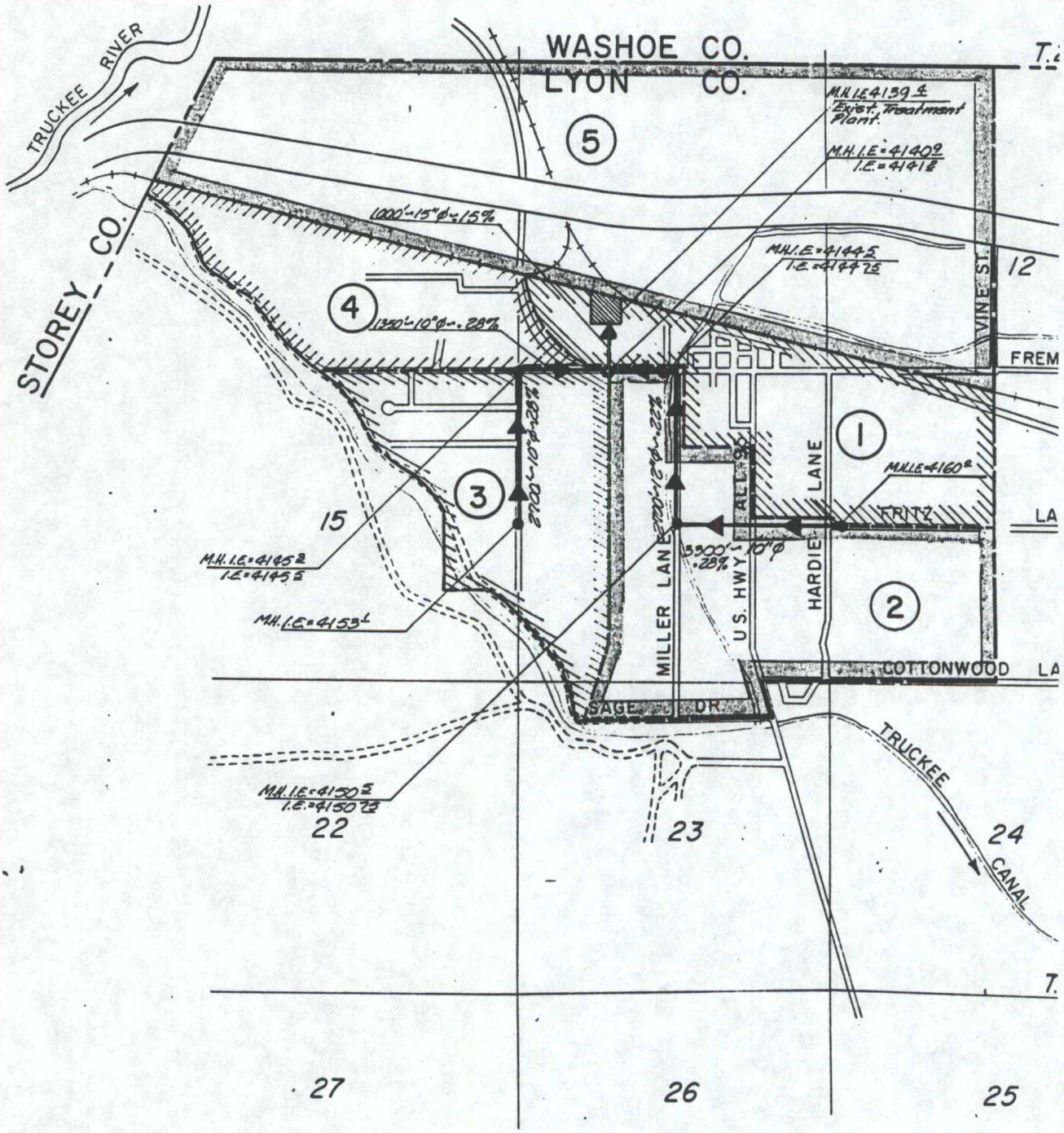


TENTATIVE DEVELOPMENT PLAN

OF

A PORTION OF SECTION 25, T.20N., R.24E., M.D.B.&M., LYON COUNTY, NEVADA


BLUE - Unincorporated Town of Fernley Boundary
PINK - New Fernley Town Utilities Service Boundary 1/23/90
ORANGE - Old Fernley Town Utilities Service Boundary
YELLOW - Fernley designated water Basin #5-76
GREEN - Newlands Truckee Canal
CHURCHILL COUNTY
WASHOE COUNTY
R. 26 E.
R. 25 E.
R. 24 E.
T. 21 N.
T. 20 N.
T. 19 N.
T. 18 N.
T. 21
To Nixon
To Reno
To Fallon
To Fallon
Wadsworth
FERNLEY
BOUNDARY OF PYRAMID LAKE IND. RES.
FERNLEY WILDLIFE MANAGEMENT AREA
4th Stand. Par. North
SOUTHERN PACIFIC
VIRGINIA RANGE
Ramsey
Talapoosa (Ruins)
Silver Springs
Spr
Spr
ALT 95
ALT 95
80
40
34
50
ENCLOSURE 4

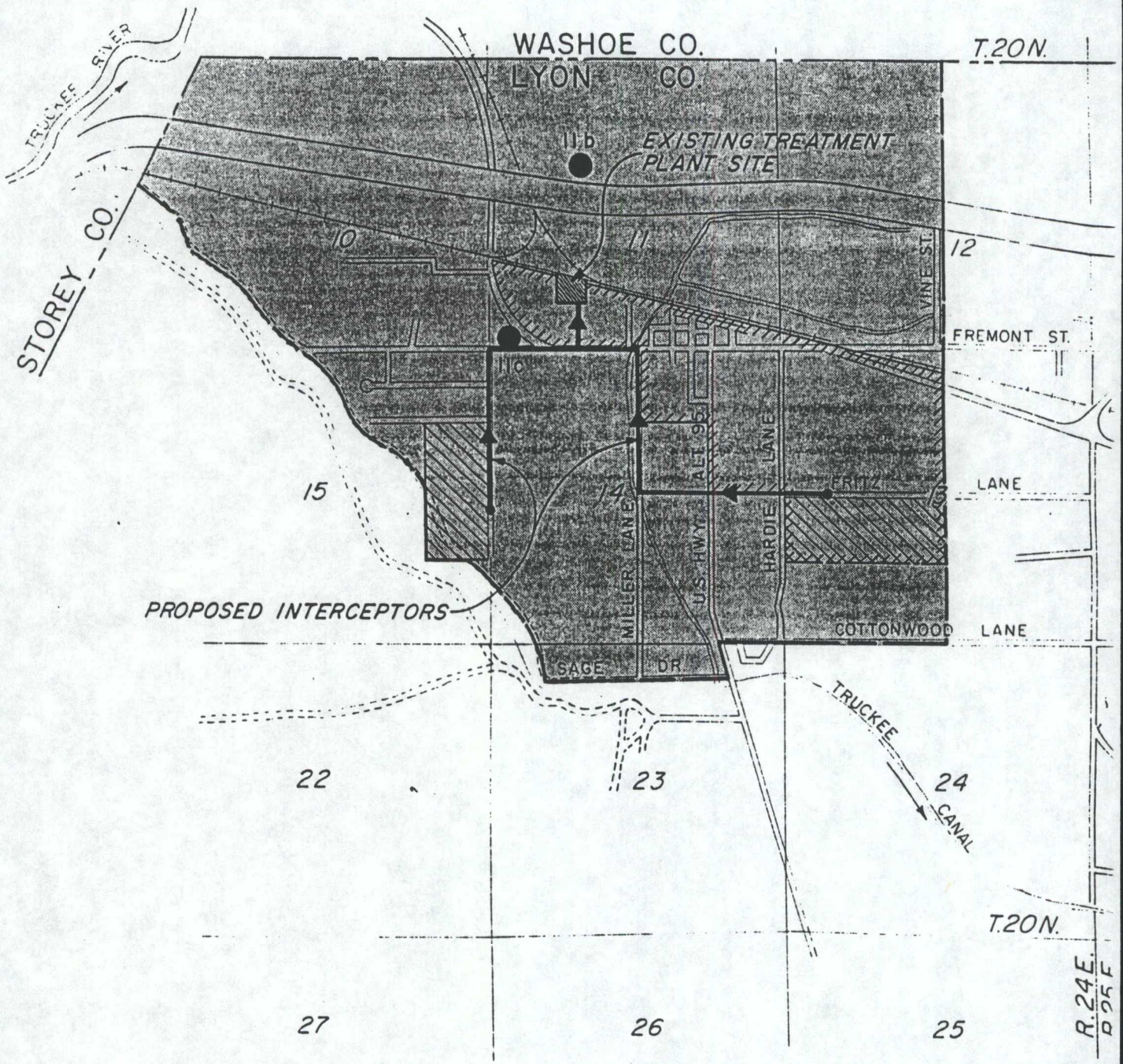


SEWER INTERCEPTORS
FERNLEY SANITATION DISTRICT

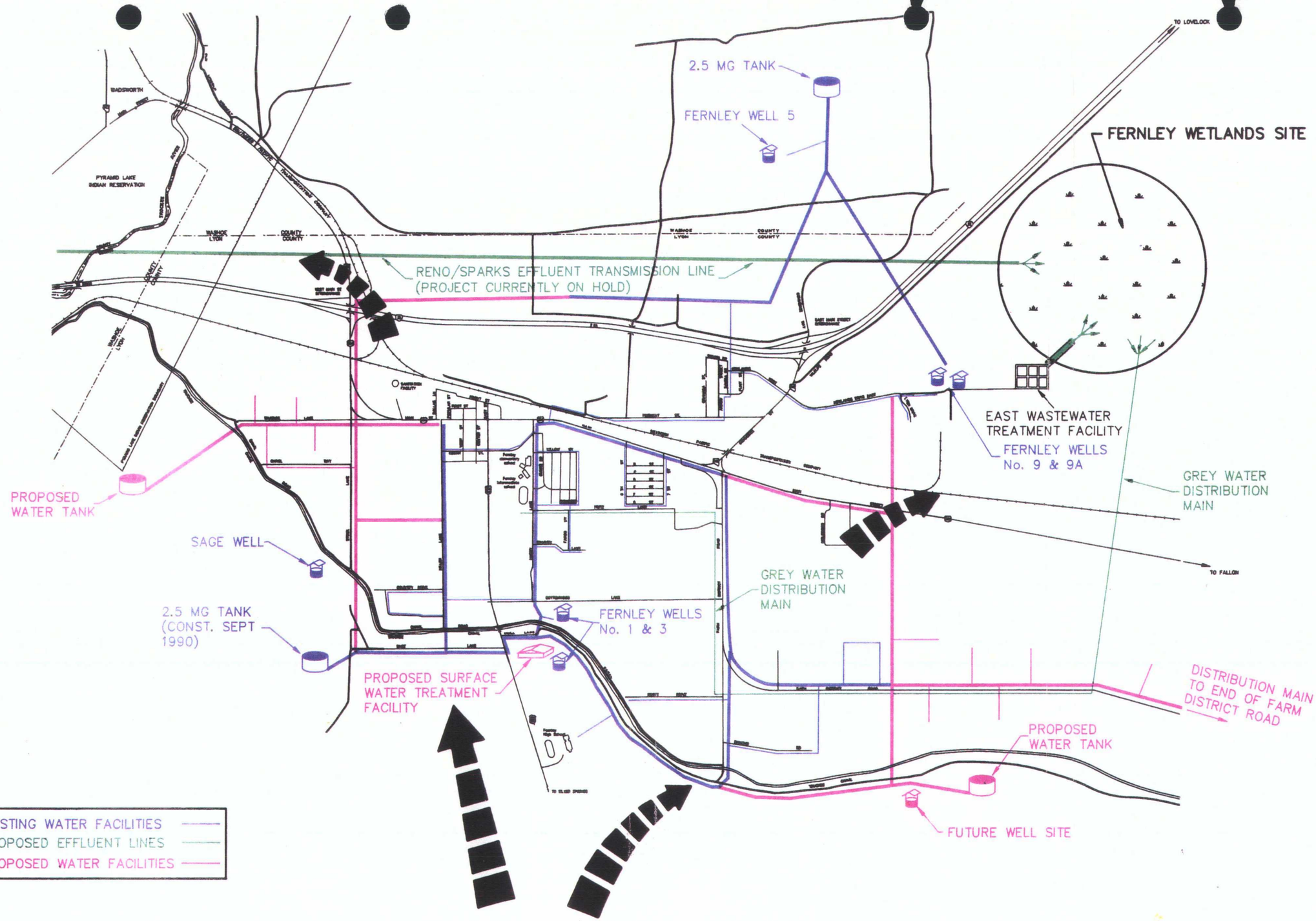
PROPOSED WASTEWATER
MANAGEMENT SYSTEM
LYON COUNTY, NEVADA

1980

ENCLOSURE 5A



ENCLOSURE 5B



ENCLOSURE 6

FERNLEY WATER SYSTEM CONCEPT

2. Percolation tests of soil must be made at the rate of four tests per 10 acres or fraction thereof and one additional test for each additional 10 acres or fraction thereof. For example, 10 such tests are required for a 67-acre subdivision. In a subdivision covering an area of more than 1 square mile, at least 16 percolation tests per square mile are required for the initial submission of data. Complete results of these tests must be submitted to the division of environmental protection and to the health division or local agency for review.
3. In any subdivision where the characteristics of soil percolation are questionable, the developer may be required to make additional tests. The location of test holes must be shown on the plan.
4. If the percolation tests show that the times for seepage exceed 60 minutes per inch, the method of absorption by soil must not be used for disposal.

(Bd. of Health, Subdiv., Condo., & PUD Reg. part & 43, eff. 9-15-82)

278.460 System of disposal; system of absorption.

1. A developer must provide a detailed layout to show the system of disposal for the lot which presents the greatest difficulty in design if:
   (a) The natural slope of the ground surface in the subdivision exceeds 5 percent; or
   (b) Any drainage channels, ditches, ponds or watercourses, high watertable and high bedrock or any easements which are in or near the subdivision are so located as to complicate the design and location of systems for subsurface disposal.
2. A system for absorption of sewage must be located at least 100 feet from any public well.
3. A system for subsurface disposal of sewage must not be constructed in the 50-year flood plain.
4. Where a proposed subdivision will have a density of two or more dwellings per acre, the construction of individual systems for disposal of sewage is prohibited if the distance from any edge of the subdivision to the nearest suitable point of connection with a public system of sewerage is less than the distance determined by multiplying the proposed number of single-family dwellings by 100 feet.

(Bd. of Health, Subdiv., Condo., & PUD Reg. part & 43, eff. 9-15-82)

STATE OF NEVADA
DEPARTMENT OF HUMAN RESOURCES
HEALTH DIVISION
CONSUMER HEALTH PROTECTION SERVICES
505 E. King Street
Carson City, Nevada 89710
(702) 687-4750

BOB MILLER
Governor

JERRY GRIEPENTROG
Director

MYLA C. FLORENCE
Administrator

D. S. KWALICK, M.D., M.P.H.
State Health Officer

January 8, 1991

Mr. Kurt Kramer
Fernley Utilities
P.O. Box 9
Fernley, Nevada 89408

Dear Kurt:

Enclosed are copies of water tests taken at Kings Mobile Home Park, a small public drinking water system located in Fernley. There are several wells on the property and several septic waste disposal systems. As you can see, the nitrate and chloride levels increase over a ten year period, with the nitrate standard eventually going over the drinking water standard of 45 ppm. This could be a result of septic waste percolation, most likely. A community sewerage line runs by the property, however, due to economics, the owner was not able to hook up service.

Sincerely,

Dana B. Pennington, R.S.
Environmental Health Specialist III
Consumer Health Protection Services

DBP:kj

Enclosure

ENCLOSURE 8A

(PLEASE PRINT OR TYPE)

660

NEVADA STATE HEALTH LABORATORY
NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

C88660

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

TYPE OF ANALYSIS: Kings Mobile Home Park PWS NC

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

All of the information below must be filled in or the analysis will not be performed.

State Nevada County Lyon
Township 20 Range 25 Section 6
General Location Fernley
Source Address Distribution

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by S. Brockway Date 7-18-90
Owner Bill King Phone 575-6205
Address P.O. Box 1204
City Fernley State NV.

REASON FOR ANALYSIS:

☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☐ Other

USE OF WATER:

☐ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other
Initials

REPORT TO:

Name Mrs. Bill King
Address P.O. Box 1204
City Fernley
State NV Zip 89408

NO3

SOURCE OF WATER:

Filter ☐ Yes ☑ No
Public ☑ Yes ☐ No
Spring
Well ✓ Depth ft.
Hot Cold ✓
IN USE ☑ Yes ☐ No

Type
Name Kings MHP
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY — 88660

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.	PRINT OTHER DESIRED CONSTITUENTS BELOW: Constituent	ppm
T.D.S. @ 103° C.		Chloride		Iron		Color			
Hardness		Nitrate	52.0	Manganese		Turbidity			
Calcium		Alkalinity		Copper		pH			
Magnesium		Bicarbonate		Zinc					
Sodium		Carbonate		Barium		RECEIVED			
Potassium		Fluoride		Boron		AUG 03 1990			
Sulfate		Arsenic				CONSUMER HEALTH			

Circled items exceed State of Nevada Drinking Water Stds. The limits are:

Fee 19.20
Collected by Please Bill
PWS I.D. 0002130
SDWA—Pri. Sec. ✓
1st 2nd 3rd
Date Rec'd Init.

ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks Nitrate only please
NITRATE - 45 PPM ~ 10.190
Billed 8-2-90

ENCLOSURE 8A

(INT OR TYPE)

258

NEVADA STATE HEALTH LABORATORY
NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

085258

WATER CHEMISTRY ANALYSIS:

Fees may apply to some types of samples.

All of the information below must be filled in or the analysis will not be performed.

TYPE OF ANALYSIS:

PWS NTNC

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

State NEVADA County LYON
Township 20 Range 25 Section 6
General Location FERNLEY
Source Address DISTRIBUTION

SAMPLING INSTRUCTIONS: KINGS MHP

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by PENNINGTON Date 1/17/90
Owner BILL KING Phone 575 6205
Address P.O. BOX 1204
City FERNLEY State NV

REASON FOR ANALYSIS:

- ☐ Loan
- ☐ Personal health reasons
- ☐ Purchase of the property
- ☐ Rental or sale of property
- ☐ Subdivision approval
- ☑ Other SDWA

USE OF WATER:

- ☑ Domestic drinking water
- ☐ Geothermal
- ☐ Industrial or mining
- ☐ Irrigation
- ☐ Other
- Initials

REPORT TO:

Name BILL KING
Address P. O. BOX 1204
City FERNLEY
State NV Zip 89408

SOURCE OF WATER:

Filter ☐ Yes ☑ No
Public ☑ Yes ☐ No
Spring
Well ✓ Depth ft.
Hot Cold ✓
IN USE ☑ Yes ☐ No

Type
Name KINGS MHP
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent 85258	S.U.
T.D.S. @ 103° C.		Chloride		Iron		Color	
Hardness		Nitrate	63.3	Manganese		Turbidity	
Calcium		Alkalinity		Copper		pH	
Magnesium		Bicarbonate		Zinc		RECEIVED	
Sodium		Carbonate		Barium		JAN 29 1990	
Potassium		Fluoride		Boron		CONSUMER HEALTH	
Sulfate		Arsenic					

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm

Fee $9.20
Collected by PLEASE BILL
PWS I.D. 2130
SDWA—Pri. Sec. ✓
1st 2nd 3rd
Date Rec'd 1.12.90 Init PLM

ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks NITRATE ONLY PLEASE

Circled items exceed State of Nevada Drinking Water Stds. The limit is:

NITRATE - 45 PPM

ORIGINAL COPY

Mailed 1/18/90

ENCLOSURE 8A

(PLEASE PRINT OR TYPE)

680

NEVADA STATE HEALTH LABORATORY
NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

084680

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

TYPE OF ANALYSIS: PWS NTNC

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

SAMPLING INSTRUCTIONS: KINGS TRLR PARK

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by: BROCKWAY Date: 11/15/89
Owner: WM. & LOIS KING Phone: 575-6205
Address: P.O. BOX 1204
City: FERNLEY State: NV 89408

REPORT TO:
Name: WM. & LOIS KING
Address: P.O. BOX 1204
City: FERNLEY
State: NV Zip: 89408

All of the information below must be filled in or the analysis will not be performed.

State: NEVADA County: LYON
Township: 20 Range: 24 Section: 13
General Location: FERNLEY
Source Address: 1190 E. MAIN ST.

REASON FOR ANALYSIS:
☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☑ Other: SDWA

USE OF WATER:
☑ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other
Initials

SOURCE OF WATER:
Filter ☐ Yes ☑ No
Public ☑ Yes ☐ No
Spring
Well ✓ Depth ft.
Hot Cold ✓
IN USE ☑ Yes ☐ No

Type
Name: KINGS TRLR P.
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
T.D.S. @ 103° C.		Chloride		Iron		Color	
Hardness		Nitrate	53.9	Manganese		Turbidity	
Calcium		Alkalinity		Copper		pH	
Magnesium		Bicarbonate		Zinc			
Sodium		Carbonate		Barium		RECEIVED	
Potassium		Fluoride		Boron		DEC 01 1989	
Sulfate		Arsenic				CONSUMER HEALTH	

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	p

Fee: $9.20
Collected by: PLEASE BILL
PWS I.D.: 2130
SDWA—Pri. X Sec.
1st 2nd 3rd
Date Rec'd: 11-16-89 Init: PLH
ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks: NITRATE ONLY

Circled items exceed State of Nevada Drinking Water Std. The limits are

NITRATE - 45.0

ENCLOSURE 8A

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

NEVADA STATE HEALTH LABORATORY
NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

81598

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of sampl

598 PWS

KINGS T, P

TYPE OF ANALYSIS:

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by PENNINGTON Date 12/13/88
Owner WM. & LOIS KING Phone 575-6205
Address PO BOX 1204
City FERNLEY State NV 89408

REPORT TO:

Name DB PENNINGTON, EHS
Address CHRS, 505 E KING ST RM 103
City CARSON CITY
State NV Zip 89710

All of the information below must be filled in or the analysis will not be performed.

State NEVADA County LYON
Township 20 Range 24 Section 13
General Location FERNLEY
Source Address 1190 E. MAIN

REASON FOR ANALYSIS:

☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☒ Other SDWA

USE OF WATER:

☒ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other
Initials DP

SOURCE OF WATER:

Filter ☐ Yes ☒ No
Public ☒ Yes ☐ No
Spring
Well ☒ Depth ft.
Hot Cold ☒
IN USE ☒ Yes ☐ No

Type
Name KINGS T P
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.	PRINT OTHER DESIRED CONSTITUENTS BELOW: Constituent	pr
T.D.S. @ 103° C.		Chloride		Iron		Color			
Hardness		Nitrate	54.1	Manganese		Turbidity			
Calcium		Alkalinity		Copper		pH			
Magnesium		Bicarbonate		Zinc					
Sodium		Carbonate		Barium					
Potassium		Fluoride		Boron					
Sulfate		Arsenic							

81598

RECEIVED
JAN 10 1989
COMMUNITY HEALTH
PROTECTION

Fee
Collected by
PWS I.D. 7130
SDWA—Pri. X Sec.
1st 2nd 3rd
Date Rec'd 12.13.88 Init. RM

ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks NITRATE COMPLIANCE CHECK SAMPLE
REFERENCE 11/16/88 # 081433 — 50.1 P.

Circled items exceed State of Nevada Drinking Water Stds. The limits are:

NITRATE - 45

ENCLOSURE 8A

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

433

NEVADA STATE HEALTH LABORATORY

NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

081433

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

All of the information below must be filled in or the analysis will not be performed.

State NV County LY
Township 20 Range 24E Section 13
General Location FERNLEY
Source Address 1190 E MAIN

TYPE OF ANALYSIS:

☒ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by Leslie Date 11-16-88
Owner LOIS KING Phone
Address BOX 1204
City FERNLEY State 89408

REPORT TO:

Name CHPS
Address 505 E KING Rm 103
City CARSON CITY
State NV Zip 89710

REASON FOR ANALYSIS:

☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☒ Other SDWA

USE OF WATER:

☒ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other
Initials

SOURCE OF WATER:

Filter ☐ Yes ☒ No
Public ☒ Yes ☐ No
Spring
Well Depth ft.
Hot Cold ✓
IN USE ☒ Yes ☐ No

Type
Name
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
T.D.S. @ 103° C.	990	Chloride	144	Iron	0.00	Color	3
Hardness	592	Nitrate	50.1	Manganese	0.00	Turbidity	0.4
Calcium	110	Alkalinity	370	Copper	0.01	pH	7.90
Magnesium	77	Bicarbonate	451	Zinc	0.15		
Sodium	78	Carbonate	0	Barium			
Potassium	39	Fluoride	0.13	Boron	N/A		
Sulfate	199	Arsenic	0.018	Silica			
						MBAS	< 0.1

Circled items exceed State of Nevada Drinking Water Stds. The limits are:

RECEIVED
DEC 12 1988
CONSUMER HEALTH PROTECTION

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm

Fee
Collected by
PWS I.D. 2130
SDWA—Pri. Sec. NC/NT
1st 2nd 3rd
Date Rec'd 11-16-88 Init.

ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks
NO3 45 may cause blue baby syndrome in infants 6 to 12

ENCLOSURE 8A

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

4350

Kings MHP

NEVADA STATE HEALTH LABORATORY
NEVADA DIVISION OF HEALTH
1660 N. Virginia Street
Reno, Nevada 89503
(702) 789-0335

74435

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

All of the information below must be filled in or the analysis will not be performed.

State NV County Lyon
Township 20 Range 24 Section 13
General Location Fernley
Source Address Dist Sample

TYPE OF ANALYSIS:

☒ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by L Rountree Date 12/22/86
Owner Phone
Address
City State

REASON FOR ANALYSIS:

- ☐ Loan
- ☐ Personal health reasons
- ☐ Purchase of the property
- ☐ Rental or sale of property
- ☐ Subdivision approval
- ☒ Other SDWA

USE OF WATER:

- ☒ Domestic drinking water
- ☐ Geothermal
- ☐ Industrial or mining
- ☐ Irrigation
- ☐ Other
- Initials

REPORT TO:

Name W. King
Address P.O. Box 1204
City Fernley
State NV Zip 89408

SOURCE OF WATER:

Filter ☐ Yes ☒ No
Public ☒ Yes ☐ No
Spring
Well X Depth ft.
Hot Cold X
IN USE ☒ Yes ☐ No

Type
Name
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent		Constituent		Constituent		Constituent		PRINT OTHER DESIRED CONSTITUENTS BELOW	
								Constituent	ppm
T.D.S. @ 103° C.	825	Chloride	97	Iron	0.00	Color	3		
Hardness	473	Nitrate	37.6	Manganese	0.00	Turbidity	0.2		
Calcium	87	Alkalinity	354	Copper	0.02	pH	7.91		
Magnesium	62	Bicarbonate	432	Zinc	0.85	EC	1284		
Sodium	73	Carbonate	0	Barium	0.25				
Potassium	41	Fluoride	0.14	Boron	0.8				
Sulfate	167	Arsenic	0.019	Silica	54				

MBAS <0.1

Chemical quality meets the State of Nevada Drinking Water Standards.

Fee
Collected by
PWS I.D. 2130
SDWA—Pri. Sec. ✓
1st 2nd 3rd
Date Rec'd 12.23.86 Init. MC

ppm = parts per million, milligrams per liter
S.U. = Standard Units

Remarks

RECEIVED
JAN 14 1987
CONSUMER HEALTH PROTECTION

ENCLOSURE 8A

IN TRIPLICATE
(PLEASE PRINT)

BUREAU OF LABORATORIES AND RESEARCH
NEVADA DIVISION OF HEALTH
790 Sutro Street
Reno, Nevada 89502

7530

38820

820

WATER CHEMISTRY:

WELL WATER: Pump should be delivering clear water before sampling.

Date sampled 5-14-76 Date submitted 5-14-76

Owner Williams H. King

Report to:
Name Williams H. King
Address P.O. Box 279
City Fernley State Nev. 89405

County Lyon
Township 20
Range 24 E Section 11
Area Fernley

WATER SOURCE:
Well ✓ Spring Surface
Hot Cold ✓ Depth Ft.
Casing diameter 6" in depth 68 Ft.
Now in use Yes ☒ No ☐

ROUTINE DOMESTIC ANALYSIS PLEASE CHECK BOX ☒		FOR PARTIAL ANALYSIS CIRCLE CONSTITUENT DESIRED		FOR CONSTITUENTS NOT LISTED BELOW PRINT IN CONSTITUENT DESIRED IN SPACE BELOW			
Constituent	P.P.M.	Constituent	P.P.M.	Constituent	P.P.M.	Constituent	P.P.M.
T.D.S.	401	Chloride	17	Iron	0.00		
Hardness	231	Nitrate	11.2	Manganese	0.00		
Calcium	43	Alkalinity	290	Color	3		
Magnesium	30	Bicarbonate	354	Turbidity	0.6		
	47	Carbonate	0	p.H.	8.09		
	34	Fluoride	0.10				
	30	Arsenic	0.015				

RECEIVED
MAY 19 1976
Consumer Health Protection Services

MAY 26 1976

ks

Chemical quality meets the U.S.P.H.S. Drinking Water Standards

5/18/76

ENCLOSURE 8A

Sierra Environmental Monitoring Inc.
47 Glen Carran Circle
Sparks, NV 89431
(702)356-3868

Laboratory Analysis Report

Date : 11/07/90
Invoice #: 3766
Client # : FER-155 PO#: 2852
Name : Fernley Town Utilities
Address : P.O. Box 9
City : Fernley State: NV Zip: 89408
Taken by : Fernley Utilities-T.L.

Sample	Collection Date	Collection Time	NITRATE-N MG/L	PHOSPHORUS-TOTAL MG/L	CHLORIDE MG/L	FECAL COLIFORM #/100ML	FECAL STREP.MPN MPN/100ML
STRUENPH M.W. #1	10/24/90	8:30	2.8 N	0.06	18	5	< 10.5
STRUENPH M.W. #2	10/24/90	8:45	2.5 N	0.18	23	1100	285

Approved By: _____

ENCLOSURE 8B

AL MONITORING

WATER QUALITY ANALYSIS RECORD

PROJECT NAME: Fernley Town Utilities — J.N. FER-155

P.O. Box 9 Fernley, Nv 89408 — P.O. #2097

SAMPLE IDENTIFICATION			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
Sample Collection Date	Time	Station ID.	pH	Alkalinity Carbonate	Alkalinity Bicarbonate	Total Dissol Solids	Hardness
MON DAY YR	0-2400		UNITS S.U.	mg/l UNITS $CaCO_3$	mg/l UNITS $CaCO_3$	UNITS mg/l	UNITS mg/l
1-26-89		Picetti Well	8.4	14	299	583	17
			Sulfate	Chloride	Nitrate	Fluoride	Sodium
			Units: mg/l	Units: mg/l	mg/l Units: NO_3	Units: mg/l	Units: mg/l
1-26-89		Picetti Well	42	26	39	0.7	200
			Potassium	Calcium	Magnesium	Iron	Manganese
			Units: mg/l	Units: mg/l	Units: mg/l	Units: mg/l	Units: mg/l
1-26-89		Picetti Well	9	3.6	1.8	0.07	<0.02
			Arsenic	Copper	Zinc	Barium	Silica
			Units: mg/l	Units: mg/l	Units: mg/l	Units: mg/l	Units: mg/l
1-26-89		Picetti Well	0.78	<0.02	0.59	<0.4	39
			Boron	Conductivity			
			Units: mg/l	umho Units: /cm			
1-26-89		Picetti Well	1.1	980			

SAMPLES BY: F.T.U. - H.H.

ANALYSIS BY: SEM - G.Gross/S.Poole/J.Mantravadi APPROVED BY:

ENCLOSURE 8C